

ABSTRACT

A method of code programming a mask read only memory (ROM) is disclosed. According to the method, a first photoresist layer is formed over word lines and a gate oxide layer of a substrate already having implanted bit lines. The first photoresist layer is patterned to develop pre-code openings over all of the memory cells, which correspond to intersecting word and bit lines. The first photoresist layer is then hardened using either a treatment implant or a treatment plasma. Subsequently, a second photoresist layer is formed over the first photoresist layer and patterned to develop real-code openings over memory cells which are actually to be coded with a logic "0" value. Each memory cell to be coded is then implanted with implants passing through the pre-code openings and the real code openings and into the memory cell.